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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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OCT 21 1996

FEDERAL COMMUNICATIONS COMMISSION
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In the Matter of)
)
The Development of Operational,)
Technical, and Spectrum Requirements)
for Meeting Federal, State and Local)
Public Safety Agency Communication)
Requirements Through the Year 2010)

WT Docket No. 96-86

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COMMENTS OF AMSC SUBSIDIARY CORPORATION

AMSC Subsidiary Corporation ("AMSC") hereby comments on the *Notice of Proposed Rulemaking* in the above-referenced proceeding (the "*NPRM*"). AMSC is pleased to be able to support the efforts of public safety agencies to improve their communications capability.^{1/} The role of public safety agencies is fundamental and, as the *NPRM* notes, "the critical responsibilities of the nation's public safety agencies require modern and innovative communications at high levels of efficiency and effectiveness." *NPRM*, para. 1. AMSC appreciates that providing public safety organizations adequate telecommunications resources

^{1/} AMSC participated fully in the proceedings of the Public Safety Wireless Advisory Committee ("PSWAC"). AMSC was represented by M. Edward Gilbert (RADM, USCG, Ret.). Adm. Gilbert's final assignment with the Coast Guard was as Commander, Eleventh Coast Guard District from 1990 to 1993, an assignment that included responsibility for all operations and risk management in the southwest and for carrying out the Coast Guard missions of law enforcement, maritime safety, port safety and security, environmental protection, military operations, and recreational boating safety. He served previously as Coast Guard Director of Telecommunications. At present, he is President of Gilbert & Associates and provides consulting services to, among others, American Mobile Satellite Corporation on matters of maritime communications. Adm. Gilbert served on the Operational, Steering, Interoperability, Transition, Spectrum and Technology sub-committees of PSWAC and submitted a White Paper on Mobile Satellite Systems for the Interoperability and Technology Subcommittees, which is included in the Final Report.

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during the coming years will be a daunting task. That task will be made easier, however, if public safety agencies take advantage of the significant resources that are offered by commercial service providers such as AMSC.^{2/}

Background

AMSC launched its first satellite into a geostationary orbit in April 1995, opening a new era of affordable mobile satellite communications. AMSC's system provides coverage over CONUS, most of Alaska, Hawaii, the Caribbean, and to more than two hundred miles offshore. Voice, data, fax, and location services are possible through automatic connections to the Public Switched Telephone Network or to specially-configured networks. Users can also purchase dispatch, push-to-talk, and "party line" talk group services. The system is completely digital, which facilitates National Security Agency encryption systems as well as commercial voice privacy alternatives. The AMSC system offers approximately 1,500 voice channels (6 kHz each).

The Commission has always recognized the valuable role that a U.S. Mobile Satellite Service system can play in providing public safety communications.^{3/} AMSC has helped to develop a variety of types of user equipment that can be deployed by public safety agencies.

^{2/} These comments follow the organization of the PSWAC Final Report and the *NPRM*, dealing in turn with Operational Requirements, Interoperability, Spectrum, and Transition.

^{3/} See, e.g. Notice of Proposed Rulemaking, Gen Docket No. 84-1234, RM-4247, 50 Fed. Register 8149 (1985), at 8150 (recognizing demand for MSS for law enforcement, disaster communications, forest fire communications, emergency medical services, search and rescue, and emergency services operations); Report & Order, Gen Docket 84-1234, 2 FCC Rcd 1825, 1841 (1986).

These include satellite-only, dual-mode satellite/cellular, transportable, and fixed site equipment, and equipment for land mobile, aeronautical, and maritime use. Typical equipment costs are \$2000-4000 per unit. Users can add location capability with a Global Positioning System component. Public safety agencies and others may purchase capacity on a per-minute basis, with a monthly access fee, or may lease dedicated channels for their exclusive use. Air-time rates are \$0.89-1.49 per minute; monthly access fees are \$25-45 per month. Dedicated channels are from \$175,000-525,000. A virtually identical Canadian satellite system with essentially duplicate coverage provides redundancy. Capacity sharing and backup support agreements are in place so there will be no single point of failure in the space segment.

AMSC provides exceptionally good communication during normal conditions and can serve as a backup system during emergencies when terrestrial systems may be destroyed or overloaded.

Discussion

I. Operational Requirements

The Final Report of the Operational Requirements Subcommittee discussed a number of basic categories of services. AMSC has reviewed these requirements with respect to day-to-day, mutual aid, and task force operations. Specific needs that may be satisfied at least partially by AMSC are:

voice dispatch
access to distant gateway stations
when local telephone systems are
overloaded
long-range telecommunications
public telephone system access

expandable to allow quick addition of
channels
channel priority assignment
media support during incidents
air-ground communications
multiple levels of encryption

travel channels for dignitary protection
computer data transmission
location data transmission
transit management
hazardous materials incident response
electronic cargo clearance
lightly loaded single channel backbone
systems

still photograph transmissions
transmission of reports and forms
electronic messaging
transmissions to support remote device
monitoring
EKG transmissions
emergency broadcasts

II. Interoperability

Interconnections to a common network can satisfy many interoperability requirements especially for interactions at the command post level. If systems can access the PSTN, information can be shared and made available to a wide audience of users without creating a new infrastructure. Satellite systems have particular advantage here when terrestrial systems are stressed. Their access to the PSTN is via a distant gateway station unlikely to be affected by a localized or even wide spread emergency.

Priority Access

Priority access to terrestrial and satellite communications systems is essential for successful emergency managers needing communications support. Priority access to AMSC's Mobile Satellite System may be assured in several ways. As an initial matter, with its 1500 channels, AMSC anticipates providing a very low blocking rate to all of its customers. For those requiring even greater certainty that higher priority calls will not be blocked, it will be possible to

configure special networks with their own internal capability to distinguish among calling priorities.^{4/}

The AMSC System can accommodate up to eight levels of access priority when the full capability is implemented.

Land, Air, and Maritime Services

Interconnecting land, air, and maritime mobile users will be necessary to achieve complete interoperability. Many emergencies require response from all the services. Hurricanes, a major fire or collision at or near a port, oil and hazardous chemical spills are examples. AMSC's system offers this capability.

Talk Groups and Dispatch

Talk groups can be established with the AMSC System, with talk groups dedicated to specific user groups. A user may belong to 15 different talk groups, permitting users in different safety services to talk to each other. A state with such a system could deploy units gathered throughout the nation to respond to a disaster such as the Oklahoma City bombing. Arriving units would be ready to communicate with each other. Talk groups could be rearranged without modifying the installed equipment. Talk groups are particularly well-suited for insuring that high-priority communications are not blocked.

^{4/} AMSC is also committed to meeting the requirements that it provide priority and preemptive access to aviation safety communications in the upper L-band and to maritime safety communications in the lower L-band.

Costs

By some estimates, existing law enforcement radio systems alone reflect a capital investment of as much as \$30 billion (\$25 billion non-federal and \$5 billion federal). Some have expressed hope that funds may be available from spectrum auctions to pay for new public safety systems, but AMSC is not optimistic that such funds will be used for public safety communications facilities.

As the *NPRM* recognizes, an important option for cost-efficient new public safety communications services is the use of commercial systems. Public safety organizations could make exceptional progress acquiring new technology and achieving interoperability with a modest investment in equipment to use the AMSC system.

As part of the Interoperability Subcommittee's work, a review was conducted of several major incidents. Here is a summary of the telecommunications problems, and how AMSC could help solve them today. These are offered as suggestions for incorporating new capabilities.

Communications Systems Overload. In each incident, available communications channels were quickly overloaded. Compatibility among systems will be discussed later, but ironically it helped with the overload problem because compatibility would have allowed more to join common channels thereby exacerbating the problem. PSWAC has identified the need for additional public safety channels, but they will not appear in the short term. AMSC could make more than hundreds of voice channels available today if one of these incidents were repeated.

Lack of Compatibility Among Sea, Air and Land Forces. AMSC's system allows communications among all these today.

Lack of a Common Information Channel. No common broadcast channel was available to convey information needed by all responders. AMSC's system allows talk groups to be established with up to 10,000 users on a common channel. If all parties talk even a little, the system will overload, but a broadcast-only channel could be established to allow the command center to "spread the word." This could be very effective in keeping all parties informed.

Local Telephone System Overload. In several incidents, the local telephone system overloaded, hindering operations. AMSC uses a distant gateway station that is unlikely to be significantly impacted by a localized disaster. The AMSC system also allows unit-to-unit communications independent of the telephone system, which could be useful at the command posts, hospitals and other responders to allow telephone system independence.

Security. While no unprotected radio system offers total security, it is much more difficult for the average person to intercept satellite transmissions than conventional land mobile communications. AMSC can offer privacy and cryptographic systems.

Location of Responding Units. In some incidents, inability to keep track of responding units was a problem. AMSC can combine GPS receivers and telecommunications systems for automatic tracking. Software programs are available to overlay this information on electronic maps.

III. Spectrum

Spectrum availability to support public safety needs has been a key PSWAC issue. Adequate frequency resources are vital if the Commission's goals are to be met. AMSC agrees with the Commission's conclusion that some combinations of additional spectrum, better use of

existing spectrum, and effective use of commercial services is the likely scenario that will produce the best outcome. However, for this to occur, an objective look at all alternatives will be necessary. AMSC agrees with the report's conclusion that, "no one approach will satisfy all public safety communications spectrum needs."

There is an appropriate role for commercial services in the satisfaction of public safety requirements. AMSC is working with public safety agencies to understand their requirements and adapt its system as necessary for their effective use. In the initial months of commercial service, AMSC has placed more than 500 satellite telephone units in the public safety market. AMSC expects that its services will be a highly effective addition to their telecommunications capabilities.

AMSC is currently authorized to use 28 MHz of spectrum in the upper portion of the L-band. This spectrum is public safety spectrum, inasmuch as aviation safety and other safety services have priority access to the band. In the Notice of Proposed Rule Making in IB Docket No. 96-132, FCC 96-259 (June 18, 1996), the FCC proposed to allow operation by AMSC in both the upper and lower portions of this band. Access to the spectrum is vital for AMSC's regular operations and to insure its ability to support public safety needs. In the lower portion of the band maritime distress and safety services have special priority.

Additional spectrum for public safety organizations will be difficult to find, and as noted elsewhere, operations in new bands in the short term should not be anticipated. Given that reality, use of existing facilities such as AMSC's system provides a practical alternative for

adding much-needed communications capability, for either routine public safety activities or for unusual situations that require hundreds of channels instantly in a specific location.

IV. Transition

AMSC agrees completely with the report's conclusion that addressing deficiencies on public safety communications requires a combination of: (1) greater use of commercial services by the public safety entities; (2) more efficient use of existing spectrum; and (3) provision of additional spectrum for public safety uses. AMSC also agrees fully with the conclusion that migration to new frequencies will be a costly and time-consuming process. For these reasons, AMSC believes there must be close cooperation between public safety organizations and providers of commercial services so that an effective dialogue can be maintained.

Conclusion

Therefore, based on the foregoing, AMSC urges the Commission to encourage the increased use of commercial systems to meet the communications needs of public safety agencies.

AMSC SUBSIDIARY CORPORATION

A handwritten signature in dark ink, appearing to read "Lon Levin", is written over a horizontal line.

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October 21, 1996